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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* THOMAS F. PAPALLO, MARCELO E. VALDES, and  
GREGORY P. LAVOIE

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Appeal 2009-002813<sup>1</sup>  
Application 10/662,945  
Technology Center 2100

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Decided: November 6, 2009

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Before JEAN R. HOMERE, JAY P. LUCAS, and  
CAROLYN D. THOMAS, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> Filed on September 15, 2003. The real party in interest is General Electric Co.. (App. Br. 1.)

## I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1 through 14, 16, and 19 through 74. Claims 15, 17, and 18 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

### *Appellants' Invention*

Appellants invented a protection system for protecting a circuit breaker that provides dynamic zone protection in a power distribution system. ([Para. 0007].) As shown in Figure 1, the protection system (26) includes a central control processing unit (CCPU 28) that monitors the protection zone of the circuit breaker (14) via a network (32) to determine a first topology thereof. ([*Id.*, para. 0028-29].) Upon detecting a change in the first topology indicating that a fault has occurred in the circuit breaker (14), the CCPU 28 adjusts the zone protective function or the algorithm associated with the protective zone of the circuit breaker (14) to thereby determine the nature of the detected fault. (Para. 0087-0089].)

### *Illustrative Claim*

Independent claim 1 further illustrates the invention. It reads as follows:

Claim 1. A method of protecting a circuit comprising:  
  
monitoring a zone of protection of the circuit to  
determine a first topology;

adjusting a zone protective function for said zone of protection based at least in part upon changes to said first topology, said zone protective function detecting a fault in said zone of protection; and

performing said zone protective function on said zone of protection to detect said fault.

*Prior Art Relied Upon*

The Examiner relies on the following prior art as evidence of unpatentability:

Sumic	5,568,399	Oct. 22, 1996
Finn	6,728,205 B1	Apr. 27, 2004
Nelson	2005/0251296 A1	Nov. 10, 2005

*Rejections on Appeal*

The Examiner rejects the claims on appeal as follows:

1. Claims 1, 3, 4, 6 through 11, 29 through 37, 39 through 46, 49, 51 through 58, 60, 62 through 69, and 71 stand rejected as being anticipated by Sumic.
2. Claims 2, 5, 14, 16, 19 through 26, 38, 50, 59, 61, 70, and 74 stand rejected as being unpatentable over the combination of Sumic and Finn.
3. Claims 12, 13, 47, 48, 72, and 73 stand rejected as being unpatentable over the combination of Sumic and Nelson.
4. Claims 27 and 28 stand rejected as being unpatentable over the combination of Sumic, Finn, and Nelson.

*Appellants' Contentions*

Appellants contend that Sumic does not teach adjusting a zone protective function based at least in part upon changes in a first topology for a protection zone, as recited in independent claim 1. (App. Br. 6-7.) According to Appellants, while Sumic discloses adjusting the order or schema in which protective devices operate, the reference does not indicate that the schema or order is a protective function that is itself being adjusted, thereby adjusting how the protective devices operate as required by the claim. (*Id.*)

*Examiner's Findings*

The Examiner finds that Sumic's disclosure of adjusting the order, schema or topology of the protective devices teaches adjusting the protective function of such devices. (Ans. 16-17.) In particular, the Examiner finds that when there is a fault in the system, the topology is adjusted via a backup scheme, which isolates the different protective zones of the system in such a way to minimize the protective zones affected by the fault. (Ans. 17.)

II. ISSUE

Have Appellants shown that the Examiner erred in finding that Sumic teaches adjusting a zone protective function based at least in part upon changes in a first topology for a protection zone, as recited in independent claim 1?

### III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

#### *Sumic*

1. Sumic discloses a method and system for determining the location of a fault in a power distribution system (PDS-20). (Abstract.)
2. As shown in Figure 1, a control circuit (24) gathers the PDS topology and the protective devices schema to determine which of the protective devices (32) were operating when the fault occurred in the power distribution grid (22). (Col. 5, ll. 9-67.)
3. Sumic utilizes the functional topology of the power distribution grid to set out a distribution system protection scheme, wherein protective devices (32) are set up in the grid to ensure that only a minimal portion of the system is affected during a fault in the grid. The protective device schema relates to the order in which the devices would operate in the case of a fault. (Col. 6, ll. 31-46.)
4. Upon detecting any changes in the topology of the distribution system, the control unit dynamically maintains and updates the schema data structure of the protective devices. (Col. 6, ll. 58-61.)
5. The control device uses fuzzy set theory to calculate the likelihood of operation for each protective device during the fault occurrence. (Col. 7, ll. 40-60.)

#### IV. PRINCIPLES OF LAW

##### Anticipation

In rejecting claims under 35 U.S.C. § 102, “[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375 (Fed. Cir. 2005) (citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992)).

“Anticipation of a patent claim requires a finding that the claim at issue ‘reads on’ a prior art reference.” *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999) (citation omitted.) “In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art. *Id.* (internal citations omitted).

#### V. CLAIM GROUPING

Appellants argue the patentability of claim 1 in conjunction with the rejection of claims 1 through 14, 16, and 19 through 74. In accordance with 37 C.F.R. § 41.37(c)(1)(vii), we will consider all the claims on appeal as standing and falling with representative claim 1.

## VI. ANALYSIS

### Anticipation

Independent claim 1 requires in relevant part adjusting a zone protective function based at least in part upon changes in a first topology for a protection zone.

As set forth in the Findings of Fact section, Sumic discloses a control unit that gathers topology information for a PDS grid as well as schema information for a plurality of protective devices in the grid prior to the occurrence of a fault therein. (FF. 2.) Upon detecting changes in the topology indicating the occurrence of a fault in the PDS, the control device updates the schemas of the protective devices, and subsequently uses fuzzy set theory to determine the likelihood of operation for each of the protective devices. (FF. 4-5.) We find that by using the fuzzy set to determine the likelihood of operation of a protective device of which the schema data structure was updated after detecting that a fault had occurred in the PDS, Sumic teaches dynamically updating the protective function of the protective device based upon changes in the topology of the PDS. In particular, we find that the schema structure of each protective device is necessarily tied to a function to enable its maintenance and updating. Further, we find that Sumic's fuzzy set theory as applied to each protective device teaches a protective function for each of said devices. Additionally, we find that by updating the schemas of the device, and subsequently applying the fuzzy set theory to determine its likelihood of operation during the fault occurrence,



Summic teaches that the fuzzy set theory uses a change in the PDS topology, updated in the device's schema, to adjust the schema as a result of the fault occurrence. It follows that Appellants have not shown that the Examiner erred in finding that Sumic anticipates claim 1.

#### Obviousness

Regarding the rejection of dependent claims 2, 5, 12 through 14, 16, 19 through 28, 38, 47, 48, 50, 59, 61, 70, and 72 through 74, Appellants reiterate the same arguments offered for the patentability of claim 1 above. (App. Br. 8.) Further, Appellants argue that none of the secondary references relied upon cures the alleged deficiencies of Sumic. (*Id.*) As discussed above, we find no such deficiencies in Sumic for these secondary references to cure. It follows that Appellants have not shown that the Examiner erred in concluding that the cited claims are unpatentable over the combinations proffered above.

#### VII. CONCLUSION OF LAW

1. Appellants have not established that the Examiner erred in rejecting claims 1, 3, 4, 6 through 11, 29 through 37, 39 through 46, 49, 51 through 58, 60, 62 through 69, and 71 as being anticipated under 35 U.S.C. § 102(b).

2. Appellants have not established that the Examiner erred in rejecting claims 2, 5, 12 through 14, 16, 19 through 28, 38, 47, 48, 50, 59, 61, 70, and 72 through 74 as being unpatentable under 35 U.S.C. § 103(a).

#### VIII. DECISION

We affirm the Examiner's rejection of claims 1 through 14, 16, and 19 through 74.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

**AFFIRMED**

llw

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